

MARINE OIL SPILL PREVENTION IN WASHINGTON STATE

by

Laura Hawley Stratton

A Thesis: Essay of Distinction
Submitted in partial fulfillment
of the requirements for the degree
Master of Environmental Studies
The Evergreen State College
June 2001

This Thesis for the Master of Environmental Studies Degree

by

Laura Hawley Stratton

has been approved for

The Evergreen State College

by

John Perkins, Ph.D.
Member of the Faculty

Date

ABSTRACT

MARINE OIL SPILL PREVENTION IN WASHINGTON STATE

Laura Hawley Stratton

Three studies, discussed in Chapter 1, support the conclusion that the “risk” of oil spills (probability times consequence) is significant in Washington State waters. Risk is indicated by volume of oil transported, vessel traffic data, and the history of major oil spills in Washington. Projections indicate that risk will increase as volume of oil transported and vessel traffic increase. Oil spill consequences include damage to the environment and negative economic and psychological impacts.

In the early 1990s, after the Exxon Valdez oil spill, Washington State responded to this “risk” by creating the Washington State Office of Marine Safety (OMS) whose mission was to prevent marine oil spills. OMS created the Best Achievable Protection (BAP) standards for tankers and tank barges and developed other marine oil spill prevention programs for cargo vessels, passenger vessels, and fishing vessels. OMS, which was funded by a tax on oil transported into Washington on tank vessels, was opposed by the shipping industry and sued by the International Organization of Independent Tanker Owners (INTERTANKO). In 1997 OMS was merged into the Washington Department of Ecology – Spill Prevention, Preparedness, and Response Program. All of OMS’ programs transferred to the Department of Ecology and all of the marine safety laws remained intact, though not unchallenged.

INTERTANKO, a powerful consortium of 253 tanker owners based 40 countries, sued Washington State on the assertion that regulating tank vessels is an area reserved for the United States federal government. Washington argued that the Best Achievable Protection (BAP) standards are a proper and valid exercise of state police power to protect Washington’s diverse and irreplaceable resources and held that it was entitled to regulate tank vessels under the provisions of the Oil Pollution Act of 1990 (OPA 90). The U.S. District Court ruled in favor of Washington so INTERTANKO appealed the case. The U.S. Department of Justice joined INTERTANKO and the case, *United States v. Locke, et. al.*, was appealed to the United States 9th Circuit Court of Appeals. The Appellate Court upheld the ruling of the District Court, so INTERTANKO appealed the case again, this time to the United State Supreme Court. In March 2000 the Supreme Court ruled unanimously in favor of INTERTANKO, finding that Washington’s BAP standards are pre-empted by federal maritime law. In response to this setback, the Department of Ecology repealed Washington Administrative Code (WAC) 317-21, the rule mandating compliance with BAP standards for tank vessels.

In spite of federal pre-emption, the Department of Ecology still has several successful oil spill prevention programs in operation, including a voluntary BAP program (VBAP) for tank vessels, a cargo and passenger vessel inspection program, a marine casualty investigation program, and a bunker program. Several other oil spill risk management strategies are currently being developed or under study. One of Washington’s most important strategies is to strengthen its alliance

with the United States Coast Guard. Evidence of progress in this area is the May 2001 signing of the Memorandum of Agreement on Oil Pollution Prevention and Response between the Commander, Thirteenth Coast Guard District and the State of Washington.

A comparison of the oil spill prevention programs in Washington, Alaska, California, Oregon, Texas, British Columbia, and the world at large reveals that only Washington has a dedicated and comprehensive oil spill prevention program for large commercial vessels. Spill rate curves based on reliable data show that spill rates are lower in Washington than in the other states surveyed and lower than the United States as a whole, indicating that Washington has been more successful at preventing oil spills than other states.

While it is not possible to prove unequivocally that oil spills have been prevented in Washington State, there is substantial evidence, based on reliable data, that strongly *suggests* that spills have been prevented. Types of evidence supporting this conclusion include spill trend analysis, performance measures, and anecdotal evidence.

The four conclusions of this thesis are:

1. It is highly probable that major oil spills posing significant risk will continue to occur in Washington State waters, including Puget Sound, the Strait of Juan de Fuca, the Columbia River, and the ocean coast of Washington;
2. Federal and international marine safety regulations, enforced by the U.S. Coast Guard, do not, by themselves, adequately protect Washington waters from the risk of marine oil spills;
3. Washington State has been more effective in preventing oil spills than other coastal states, British Columbia, and the United States as a whole; and
4. Between 1991 and 2001, Washington State programs and initiatives administered by the Office of Marine Safety and the Department of Ecology, in concert with federal and international regulations, have reduced the number of oil spills and other marine accidents occurring in Washington waters.

CONTENTS

LIST OF FIGURES.....	viii
LIST OF TABLES.....	ix
ACKNOWLEDGMENTS.....	x
Chapter	
1. The Risk of Marine Oil Spills in Washington Waters.....	1
Risk Defined in the Context of Marine Oil Spills	6
Volume of Oil Transported as a Risk Indicator.....	7
Vessel Traffic as a Risk Indicator.....	9
Oil Spill Consequences.....	13
History of Oil Spills in Washington as a Risk Indicator.....	18
History of Incidents (Including Oil Spills) as a Risk Indicator.....	19
The Volpe Study – A Scoping Risk Assessment.....	23
The North Puget Sound Long-Term Oil Spill Risk Management Panel.....	26
The Federal Tug Cost-Benefit Study.....	27
2. The Office of Marine Safety.....	30
The Office of Marine Safety and the Controversial BAPs.....	33
The Oil Spill Prevention Programs of the Office of Marine Safety.....	35
Washington State Strikes a Compromise with the Shipping Industry.....	35
Oil Spill Prevention Plans for Tank Vessels and Tank Vessel Inspections.....	36

Chapter

The Cargo and Passenger Vessel Screening Program and Vessel Inspections.....	38
The Lessons-Learned Approach to Marine Safety.....	41
The Bunker Program.....	41
The Vessel Investigations Program.....	42
The Oil Spill Contingency Plan Program.....	42
History of Legislation Affecting the Office of Marine Safety.....	43
Federal Legislation to Prevent Oil Spills.....	47
The U.S. Coast Guard Does Not Do Enough Prevention.....	49
Shipping Industry Opposition to the Office of Marine Safety	50
Legislative Maneuvering to Abolish (or Save) the Office of Marine Safety.....	54
How the Office of Marine Safety Was Funded.....	62
The Merger of OMS and the Department of Ecology.....	67
The Story of the Office of Marine Safety Put in Perspective	68
3. The INTERTANKO Lawsuit and Court Rulings.....	72
The Ruling of the United States District Court.....	74
The INTERTANKO Appeals.....	78
States' Rights and Pre-emption of State Law.....	80
The Impact of the INTERTANKO Lawsuit on the Department of Ecology.....	84
4. Life after INTERTANKO - Oil Spill Risk Management Strategies in Washington State.....	86
What Prevents Most?.....	87

Chapter

Strengthening Washington's Alliance With the U.S. Coast Guard.....	92
Vessel Inspections – State and Federal.....	98
Marine Casualty Investigations and the Lessons-Learned Approach to Marine Safety.....	100
The Voluntary Best Achievable Protection Program for Tank Vessels.....	108
The Bunker Program.....	116
Tug Escort Requirements – State and Federal.....	117
The Rescue Tug Debate.....	120
Regulatory Assessment – Use of Tugs to Protect Against Oil Spills in the Puget Sound Area (The Federal Tug Cost-Benefit Study).....	127
The Eight Alternatives of the Federal Tug Cost-Benefit Study.....	128
Financial Responsibility Requirements.....	129
Writing a New Rule for Tank Vessels.....	134
Using Publicity as a Powerful Tool.....	136
The Spills Program Web Site.....	140
Voluntary Tanker Chartering Certification Program.....	143
Offshore Vessel Traffic Risk Management Project.....	144
Creative Alternative Uses For Washington State Monies.....	145
The North Puget Sound Long-Term Oil Spill Risk Management Panel.....	147
5. What Other States, Canada, The United States, and the World Are Doing to Manage the Risk of Oil Spills.....	151

Chapter

General Comparison of Prevention Programs and Initiatives.....	153
Alaska.....	155
Oregon.....	159
California.....	161
Texas.....	164
British Columbia, Canada.....	166
International Marine Safety Schemes.....	167
Monetary Incentive-Based Programs – The Green Award.....	174
6. Conclusions, Supporting Arguments, and Recommendations.....	179
Conclusions - Summary.....	179
Conclusion 1.....	179
Conclusion 2.....	181
Conclusion 3.....	188
Conclusion 4.....	189
The Neel-Etkin Study.....	193
Methodology Used in the Neel-Etkin Study.....	194
Findings of Data Analysis.....	195
Bunker Inspections as Evidence.....	201
Vessel Monitoring as Evidence.....	203
The Rescue Tug at Neah Bay as Evidence.....	204
Recommendations.....	206
APPENDIX A – Washington Administrative Code 317-21 (<i>repealed</i>).....	214

APPENDIX B – The International Safety Management (ISM) Code.....	256
APPENDIX C – Memorandum of Agreement on Oil Pollution Prevention and Response Between the Commander, Thirteenth Coast Guard District and the State of Washington.....	267
APPENDIX D – The 24 Recommendations of the North Puget Sound Long-Term Risk Management Panel and Comments of Thesis Author.....	280
APPENDIX E – The United States Constitution – The Articles.....	289
APPENDIX F – Opinion of Supreme Court Justice Anthony Kennedy on the case <i>United States v. Locke</i>	301
LIST OF ACRONYMS AND ABBREVIATIONS.....	318
REFERENCES CITED.....	320
REFERENCES CONSULTED.....	327

LIST OF FIGURES

Figure	Page
1. Vessel traffic forecast.....	12
2. Composite of all incidents less ferries.....	21
3. Spills greater than 100,000 gallons from oil tankers in U.S. waters....	22
4. Spills greater than 100,000 gallons from tank barges in U.S. waters..	22
5. General approach of the Volpe Study.....	23
6. Total projected oil spillage 2000 - 2025.....	28
7. Study area of the Federal Tug Cost-Benefit Study.....	127
8. Vessel Prevention menu at Ecology Spills Program Web Site.....	140
9. Oil spills per transit from all types of vessels over 300 gross tons, 1992 – 1999.....	196
10. Annual number of oil spills for all vessel types from vessels (1987 – 1999) in Washington, Texas, California, and New York.....	197
11. Annual number of oil spills for all vessel types from vessels (1987 – 1999) in Washington, Texas, California, and New York, with historical event lines added.....	198
12. Rate of bunker spills before and after bunker inspections.....	202

LIST OF TABLES

Table	Page
1. Projected volume of crude oil and refined petroleum products moving into and out of Puget Sound during calendar year 2000.....	8
2. Vessel traffic in Washington waters in 2000 (VEAT 2000).....	10
3. Tank barge traffic in Washington waters in 2000 (VEAT 2000).....	11
4. Comparison of author's prevention-effectiveness rankings with those of all Department of Ecology maritime professionals.....	91
5. Tanker escort requirements for Puget Sound: federal and state.....	117
6. Organizations involved with the North Puget Sound Long-Term Oil Spill Risk Management Panel.....	148
7. Comparison of West Coast marine oil spill prevention requirements	154
8. Analysis of Washington State spills-per-transit trends (1992-1999)...	196

ACKNOWLEDGMENTS

For his thoughtful guidance, excellent suggestions, and generous encouragement, Professor John Perkins is gratefully acknowledged. In the capacity of thesis reader, Professor Perkins was immensely helpful and patient. John Perkins came through for me in a big way, helping me discover that my career in marine oil spill prevention would provide the basis for a thesis I could write with authority and passion. Thanks also to Professor Ted Whitesell for his encouragement and for introducing me to the Eviatar Zerubavel time-management approach to writing a thesis.

At the Washington Department of Ecology sincere thanks go to risk management strategist Jon Neel who made many invaluable suggestions, provided several interviews, and co-authored the Neel-Etkin Study presented in Chapter 6. Many thanks to Spills Program Manager Stan Norman for granting several interviews, for his advice on sections pertaining to the Coast Guard, and for encouraging me to pursue the Master of Environmental Studies (MES) Degree in the first place. Special thanks to Data Analyst Jack Barfield for providing a wealth of vessel incident data and for his help with the *Offshore Vessel Traffic Risk Management Project*, to Senior Policy Analyst and lawyer Jeff Fishel for patiently helping me understand the INTERTANKO lawsuit and for his help with financial responsibility requirements, to Senior Marine Casualty Investigator Mike Lynch for sharing his ideas on the lessons-learned approach to marine safety and for encouraging me not to give up on writing this thesis, to Oil Spill Response Planner David Mora for his insights on the challenges of recovering spilled oil, to Information System Specialist John Williams for his help with the section on the Spills Program Web Site and for converting the thesis to PDF format, to former Spills Program Manager Joe Stohr for his contributions on the importance of program funding, to Dick Logan for recommending I review David Webster's book *Nestucca: An Oil Spill Turns Creative*, to Roy Robertson and Lori Crews for their help with the section about Alaska, to Captain Guy Grayson for his input on vessel inspections, and to Mariann Cook-Andrews for being kind enough to proofread several sections of my thesis and for making many useful suggestions on improving the overall flow.

Many others consented to being interviewed and provided much essential information including: Mike Zollitsch of the Oregon Department of Environmental Quality, Joy Lavin-Jones of the California Office of Spill Prevention and Response, Susan Harvey of the Alaska Department of Environmental Conservation, Jean Cameron - Executive Director of the States/BC Oil Spill Task Force, Barbara Herman, Director of the Office of Marine Safety, Harry Hutchins – former Executive Director of the Marine Exchange, and Washington State Senator Karen Fraser.

I am indebted to Sandra Stratton whose love, support, and encouragement kept me going when I felt discouraged, and to all of my family who, while not living nearby, were always pulling for me.